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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,303	07/20/2002	Eugeniusz Rylewski	154.1050	1177

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EXAMINER

FLANIGAN, ALLEN J

ART UNIT	PAPER NUMBER
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3753

DATE MAILED: 03/16/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/088,303

Applicant(s)

RYLEWSKI, EUGENIUSZ

Examiner

Allen J. Flanigan

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 4-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 9-13 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Applicant's election with traverse of the species of Figs. 1-5 in Paper No. 8 is acknowledged. The traversal is on the ground(s) that the disclosed species all comprise a "thermal diode", presumably the "special technical feature" required for unity of invention. This is not found persuasive because as the Examiner clearly pointed out previously, under the PCT rules a feature can be considered a "special technical feature" only if it "defines the contribution the invention makes relative to the prior art" (*i.e.* is novel). Zelek et al. shows that thermal diodes of the type claimed in generic claim 1, for example, are not novel.

The requirement is still deemed proper and is therefore made FINAL.

Claims 4-8 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 8.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 9, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Zelek et al.

Zelek et al. show a thermal diode that acts in the same manner as the elected embodiment of Figs. 1-5, i.e. it permits thermosyphonic circulation of fluid from a lower heated wall along a tilted upper wall to an upper vertical wall, whence cooled, the fluid falls due to density and follows a lower tilted wall back to the lower vertical wall. Claims 2 and 3 merely recite inherent characteristics of the device of Zelek et al. Regarding claim 9, note that Zelek et al. show their device mounted behind a window (62), and the opposite wall not facing the glazing will obviously back onto a mass (room air) to be heated or cooled. Regarding claim 12, see lines 56-59 of column 1, claims 2 and 10.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Zelek et al.

It does not appear that the "first" and "second" walls are positively recited elements of the claims (claim 1 recites "an insulating unit capable of being interposed between the first wall and the second wall"), but rather indicate an intended environment for the device. Even if such recitations are considered positive elements of the claim, it would appear that Zelek et al. clearly teaches or suggests "backing" his device against a building wall. For example, it is

shown adjacent to a window 62 which presumably forms part of a wall; Zelek et al. also discuss the use of prior art storage devices as "Trombe walls", which means affixing them to an exterior wall for passive heat absorption. Thus, even if Zelek et al. do not clearly teach this possibility, the discussion regarding Trombe walls would be sufficient incentive to make it obvious for one skilled in the art to use the disclosed thermal device in such a fashion.

Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zelek et al.

Zelek et al. indicate that a "fluid" fills the thermal diode device. Fluid as a term of art refers to both gases and liquids; air being the most common and abundant (and least expensive) heat exchange gas. Note also lines 10-12 of column 3, explicitly indicating the possibility of using a gaseous fluid. In view of this, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to use air as the heat transfer fluid of Zelek et al.

Regarding claim 13, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to use any well known insulating material, and clearly the scope of claim 13 encompasses a variety of well known insulating materials.

Applicant's comments filed 2/6/04 have been fully considered but they are not persuasive.

There is nothing in the claims rejected that defines over the structure disclosed in Zelek et al. The term "insulating unit" appears to be merely nominal, referring to the overall device, rather than any particular feature. It is not deemed to require the presence of any insulating material (*cf* claim 14). What insulative properties does the recited structure have that Zelek et al. does not? Both allow heat transfer in one direction, and prevent it ("insulate") in the opposite. Nor do the claims require or recite any specific structure defining channels that Zelek et al. does not show. Channels are defined in Zelek et al. by the parallelepiped structure shown (see Fig. 1 of Zelek et al.). These channels may not be physically isolated from the stagnant fluid within the center of the device by an enclosing structure, but the claims do not positively recite any such structure (again, *cf* claim 14).

Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

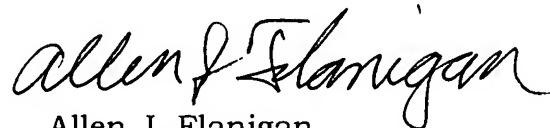
The remaining references show various thermal storage/transfer or thermal diode devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen J. Flanigan whose telephone

number is (703) 308-1015. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Scherbel can be reached on (703) 308-1272. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allen J. Flanigan  
Primary Examiner  
Art Unit 3753

AJF